-- Fig. 3 demonstrates the case for a quantum dot laser diode having seven layers of InAs quantum dots (72, 73, etc.) with GaAs barriers (9, 12, 15, etc.), with $Al_{0.35}Ga_{0.65}As$ barriers (8, 16), and with $Al_{0.7}Ga_{0.3}As$ electron (4) and hole (20) emitting layers barriers, grown on a GaAs substrate which is part of the contact layer 30. For this example, the metal contact (58 in fig. 2) is 60 micron wide and 5mm long on top of GaAs contact layer (22). Cleaved facets with no facet coatings (60 and 62 in fig. 2) are used here. The resulting 0-dimensional transition (S, P, D, F, and WL) can be observed at the bottom of fig. 3 in the electroluminescence (EL) and photoluminescence (PL) spectra obtained at different excitation intensity and current. The top of the fig. 3 demonstrates lasing at lambda ~ 965nm, in the lower zero-dimensional states, at a wavelength about one hundred nanometers away for the shortest achievable wavelength which would correspond to the wetting layer (WL) transitions. The threshold current density to obtain lasing in this case is 13.5 A/cm^2, resulting in a range of saturated zero-dimensional states, and a range of saturable zero-dimensional states as indicated. --

In the Claims

Please amend claims 1 and 5 as follows:

1(Amended). A laser system comprising a laser diode with a multitude of self-assembled low dimensional quantum structures organized to emit light continuously over a wavelength range of hundreds of nanometers, said quantum structures being selected from the group consisting of quantum dots and quantum wires, a wavelength-selective element for selecting a wavelength of interest emitted by said laser diode, and an external cavity resonant at a wavelength selected by said wavelength-selective element so that the system generates laser light at said selected wavelength.

5(Amended). The laser system of claim 1, wherein said low-dimensional structures are quantum dots obtained by spontaneous island formation during epitaxy of highly strained semiconductors.